R. Michael Turnnspeed, Director

ALLEN BIAGGI. Administrator

(775) 687-4670
TDD 687-4678

Administration
Water Pollution Control
Facsimile 687-5856
Mining Regulations & Reclamation
Facsimile 684-5259

State of Nevada
KENNY C. GUINN
Governor

Waste Management
Corrective Actions
Federal Facilities

Air Quality
Water Quality Planning

Facsimile 687-6396

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL PROTECTION

333 W. Nye Lane, Room 138
Carson City, Nevada 89706

October 9, 2002

Mr. Dave McCarthy
Atlantic Richfield Company
307 E Park Ave.
Anaconda, Montana 59711

SUBJECT: **Draft Fugitive Dust Work Plan, Yerington Mine Site**
Dear Mr. McCarthy:

The Nevada Division of Environmental Protection (NDEP) has received and evaluated the **Draft Fugitive Dust Work Plan, Yerington Mine Site,** dated July 11, 2002, regarding the continued environmental investigation of the Yerington Mine, located in Lyon County near Yerington Nevada. This office provides the following comments from NDEP, EPA, BLM, U.S. Fish and Wildlife and other technical representatives of the Yerington Technical Work Group (YTWG). While this document has provided an outline for an approach to studying the airborne dust and particulate problem in Yerington, it has severe limitations in both its Data Quality Objectives (DQOs) and its ability to provide the necessary data to determine if airborne surface materials from the Site have an adverse effect on the health and environment of its off-site receptors.

Specific Comments

Page 3, Section 1.3; The data presented from the earlier PM10 data collection should be presented along with a description of the methodology and/or meteorology data.

The ambient air quality monitoring data for the Fort Churchill power plant was submitted to NDEP by Sierra Pacific Power Company's ambient monitoring contractor, ENSR. The wording may not be clear that the data were not generated by NDEP monitoring. This also applies to

Table 2.1, titled "Air Quality Monitoring results (ug/m3) from NDEP 1996-1998" in Appendix A.

Page 4, Section 1.3; Previous Monitoring and Assessments; A few corrections are necessary regarding the April 2001 visit by Mike Abbott of the Idaho National Environmental Laboratory (INEL). Mike Abbott is with INEL and not ETSC. INEL is a contractor for the EPA Technical Support Center (TSC) in Las Vegas and assisted EPA on this Site visit. Mike's observations should be attached to the report as an Appendix, rather than cutting sentences from his report. The visit was short and no in-depth scientific measurements were taken. For example, while it was stated that there was a crusted surface, it was also noted that trespassers and other traffic had broken through in certain areas, and thus destroyed this cover.

Page 5, Section 1.3; We cannot confirm that all of the iron bleed tailings (red dust material) have been capped. For example, part of the side of a roadway with red dust was not capped during this process.

Page 5, Section 1.4; **Data Quality Objectives;** The Yerington Technical Workgroup should define and agree on investigation elements and endpoints. We recommend that the investigation of fugitive dust be completed in phases; a trigger at each phase should determine the next phase given the large area of the Site and the adjacent communities. The work plan should examine the potential off-site impact, by investigating what is leaving the mine Site and is in the air off-site. Part of the investigation needs to establish if the dust blown from the Site contains or has significant metal concentrations adsorbed to the particulates, or the particles themselves are high in metals and metalloids.

Also, the investigation design may be different depending upon whether one is looking at particulate issues, or acute or chronic health effects (i.e., one may want to see if there is a potential health effect issue or just a nuisance dust issue), one could design a potential investigation to see if households adjacent to the Site have any high amounts of contaminated dust. One way to do this is to gather vacuum bags from the households over a period of several months and have the contents analyzed for metals of concern to see if there is any adverse health effects level (the DQOs set in advance would have to look at health effects or PRGs, etc.). This would give us an idea of acute exposures. With chronic exposures, we would probably have to rely on soil surface concentrations, since it is possible that attic samples would not be useful (unless there are homes where no insulation was installed in the past 10-15 years).

As an example, limited lead sampling was conducted as part of the recent red dust interim remedial action at the mine. While most sample results were well below the EPA Region IX Preliminary Remediation Goal (PRG) residential standard for lead, and no samples exceeded the industrial standard, one sample of the red dust material did exceed the residential standard for lead of 400 mg/kg in soil. If further sampling indicates that lead may be present in concentrations that may be hazardous to human health or the environment, further investigation may be required. If this further investigation indicates that there is potential for this material to be transported off-site at levels that warrant further evaluation, the DQO should reflect the possible need for blood sampling and the incorporation of the use of the lead biokinetic model for the risk assessment.

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The objectives should also include secondary depositional sources. Re-suspended dust could add to the overall particulate matter both on- and off-site. Collection of ambient air with a proper methodology will help document dust and particulate matter that is respirable, both on-site and off-site. Some of the NDEP guidance in Appendix B is out-of-date. The Nevada Bureau of Air Quality's Ambient Air Quality Monitoring Guidelines will be revised to change the recommended meteorological sampling frequency from two seconds to at least once per second to accommodate the EPA-recommended Mitsuta method for averaging horizontal wind directions (Meteorological Monitoring Guidance for Regulatory Modeling Applications, February 2000). This method utilizes single-pass processing and requires that consecutive wind direction samples not differ by more than 180 degrees.

Include a discussion regarding the use of modeling. Development of closure alternatives should also include reclamation.

Page 6, Data Quality Objectives; Other exposure pathways should be included in the paragraph starting, the problem statement (Step 1) is as follows. Please see comments for Figure 5.

Page 7, Data Quality Objectives; It is possible that one year of air quality monitoring would not be sufficient.

Page 11, Section 2.2, Potential Pathways and Transport Mechanisms; Please see comments on the Conceptual Site Model under Figure 5. For example, dusts have many indirect pathways (see U.S. EPA, Multiple Pathway Exposure documents; available on the EPA web site). For example, domestic animals can carry large amounts of metal-laden dusts into the closed house, which is then inhaled. It has been shown that in dry, arid areas, this load (human exposure pathway) from indirect and secondary exposures can be substantial.

Page 12, Section 3.0, Workplan; Please correct or delete the conclusion attributed to ETSC. If the site has 2-and 4-wheel drives cris-crossing it, these tailing areas will have a significant potential for fugitive dust emissions. Erosion, heavy rains and other factors can play a role in destroying this very limited cap.

Page 12, Section 3.0; The last sentence of this section states that Atlantic Richfield proposes to synthesize the meteorological air quality data collected over a 12-month period to evaluate the effects of PM10 emissions and possible COCs on human health and the environment in a Data Summary Report. It may be appropriate to evaluate the data in a screening assessment as part of a data summary report to determine if there is a complete air pathway for any COCs. If there is a complete pathway for any COC it will be necessary for Atlantic Richfield to complete a risk assessment evaluating multiple exposure pathways, including the air pathway. Please provide details on how Atlantic Richfield will address any human and ecological health effects.

Page 12 and 13, Section 3.1, Proposed Monitoring; EPA assisted in selecting a suitable locations for air monitors on August 29, 2002. Overall, the fugitive dust work plan should propose a minimum of 5 samplers to get a thorough understanding on dust being blown from the Site toward the city of Yerington and toward populations living north and northeast of the Site.

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However, for the current baseline project, we would suggest that, at a minimum, 3 stations be established. These stations would not be duplicated as is done in the guidance for a facility, but rather single stations of the same genera as that in the Nevada guidance (as well as the EPA guidance) with some exceptions. The first station would be located near the meteorological station. The second station would be at an approximate angle of 5 o'clock down to the middle of the sulfide tailings pond (UNUM 328000 x 1550000) see the fudicial point on Brown and Caldwell's Figure 3 from May, 2002). The third point would be in the center of these points, approximately at the corner of the unlined and evaporation ponds below the service road. According to the early wind rose diagrams, this would be the direction that a majority of dust particles would follow leaving the Site.

Storm events should be monitored, and several events charted and sampled. We suggest that additional samplers be located at these points or the same samplers could be used when not running total samples. The samplers could operate on a switch tied to the met station and when the wind speed exceeds a given number then the samplers turn on for a timed interval (possibly an hour or two). Regional met data could be consulted to develop an idea of storm length, and local residents could be queried. A background comparison is recommended on several low wind or no wind days for the same period of time.

Samplers used for comparison to the PM10 standards must be designated by the US EPA as a Federal Reference Method or Equivalent Method. These samplers should be sited as closely as possible to the guidance in 40 CFR 58, Appendix E, Probe Siting Criteria for Ambient Air Quality Monitoring. The most difficult guidance to meet in the desert west is often that "Stations should not be located in an unpaved area unless there is vegetative ground cover year round, so that the impact of wind blown dusts will be kept to a minimum."

Page 14, Quality Assurance and Quality Control; The Quality Assurance and Quality Control section is unacceptable and should be prepared according to EPA's guidance documents. EPA will provide these on request or they can be obtained from EPA's website. Atlantic Richfield stated in the January 30, 2002 response to comments that a QA/QC Plan...could be developed one time prior to the various site investigations, with specific addendums developed for each mine unit or as part of specific Work Plans as necessary. Please provide a date for submittal of the QA/QC Plan as this must be reviewed and approved prior to initiation of fieldwork. The QA/QC issues listed should also include calibrations and audits.

Figures 3, 4; Data sets should be included with the wind rose patterns. For example, it is difficult to determine if the center point is where the met station is located or at the office at the mine site.

Figure 5; a) Ecological receptors should be added for fugitive dust. Some of the specific ecological receptors include livestock (horses) and crops. The exposure route should include incidental ingestion, b) the dermal exposure route should be added for sediment for human and ecological receptors, c) for groundwater, potential receptors include livestock and crops. The exposure route should include dermal contact, and d) Food chain pathways should be listed on the figure. For example, fish or hunting of game (deer/rabbit).

Figure 5; Add a box in the Potential Sources column for secondary sources to account for a) dust re-suspended and b) sediments to the Wabuska Drain (contaminants to surface or groundwater).

Appendix B: The Nevada Bureau of Air Quality's Ambient Air Quality Monitoring Guidelines will be revised to change the recommended meteorological sampling frequency from two seconds to at least once per second to accommodate the EPA-recommended Mutsuta method for averaging horizontal wind directions (Meteorological Monitoring Guidance for Regulatory Modeling Applications, February 2000). This method utilizes single-pass processing and requires that consecutive wind direction samples not differ by more than 180 degrees.

Accordingly, please provide the **Draft Final Fugitive Dust Work Plan, Yerington Mine Site**, which incorporates the above comments. This information must be received not later than November 8, 2002, as per approved submittal schedule.

Should you have any questions or if I can be of any assistance, please do not hesitate to contact me at (775) 687-9376 or FAX (775) 687-6396. All future correspondence regarding this subject should be addressed to the undersigned.

Sincerely,

Arthur G. Gravenstein, P.E.
Staff Engineer
Remediation Branch
Bureau of Corrective Action

ec: Ms. Jennifer Carr, NDEP
Mr. Doug Zimmerman, NDEP

Cc: Mr. Joe Sawyer, Project Manager, SRK Consulting, 102 Birch Drive, Yerington NV. 89403
Mr. Dave McCarthy, Atlantic Richfield Company, 307 E Park Ave., Anaconda, Montana 59711
Mr. Chuck Zimmerman, Senior Associate, Brown and Caldwell, 3488 Goni Road, Suite 142, Carson City, NV 89706
Mr. Chuck Pope, Deputy Assistant Field Manager, Bureau of Land Management, Carson City Field Office, 5665 Morgan Mill Road, Carson City, NV 89701
Ms. Molly Mayo, Senior Mediator, Meridian Institute, P.O. Box 1829 Dillon, CO 80435
Mr. Elwood Emm, Chairman, Yerington Paiute Tribe, 607 W. Bridge St., Yerington, NV 89447
Mr. Robert Quintero, Chairman, Walker River Paiute Tribe, P.O. Box 220, Schurz, NV 89427

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Mr. Tad Williams, Environmental Director, Walker River Paiute Tribe, P.O. Box 220, Schurz, NV 89427

Mr. Stanley Wiemeyer, U.S. Department of Interior, Fish and Wildlife Service, 1340 Financial Blvd, Suite 234, Reno, NV 89502-7147

Mr. John Krause, Environmental Coordinator, Bureau of Indian Affairs, Phoenix Area Office, P.O. Box 10, Phoenix, AZ 85001

Ms. Bonnie Arthur, Project Manager, U.S. Environmental Protection Agency, Region IX, 75 Hawthorne Street, San Francisco, CA 94105

Ms. Phyllis Hunewill, Commissioner, Lyon County, 31 South Main Street, Yerington, NV 89447 Mr.

Steve Snyder, County Manager, Lyon County, 31 South Main Street, Yerington, NV 89447

Mr. Dan Newell, Manager, City of Yerington, 102 South Main Street, Yerington, NV

Mr. Bob McQuivey, Habitat Bureau Chief, Nevada Division of Wildlife, 1100 Valley Road, Reno, NV 89520

Ms. Libby Levy, 75 Hawthorne Street, San Francisco, CA 94105

Ken Paulsen, Behre Dolbear & Company, Inc., PO Box 1930, Arvada CO 80001

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